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ABSTRACT

This tip sheet provides information on key educational reform issues and advises education writers on covering vocational education. Part one, Key Educational Reform Issues Areas, addresses three issues: integrating academic and vocational education, tech prep, and performance standards and measures. Eight integration models are described: incorporating more academic content; combining academic and vocational teachers; making academic courses more vocationally relevant; curricular "alignment"; requiring a senior project; initiating an academy model; developing occupational high schools and magnet schools; and focusing on occupational clusters, career paths, and occupational majors. Other policies for course approval, funding, and teacher training are outlined that could be used to support academic and vocational integration. Seven types of tech-prep programs are identified: traditional agreement, advanced placement, "two plus two", enhanced technical education, more information, nonduplication, and modified curriculum. Measures and standards are addressed in three broad categories: learning, labor market, and accessibility. Part Two, Covering Vocational Education, lists reading materials, suggests important issues and questions to ask, and presents information on NCRVE resources and ordering. (NLA)

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National Center for Research in Vocational Education

University of California, Berkeley

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KEY ISSUES IN VOCATIONAL EDUCATION: TIP SHEET FOR EDUCATION WRITERS

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The Center's Mission

The mission of the National Center for Research in Vocational Education is to engage in research and related activities designed to increase the access of all Americans, regardless of their aptitudes or abilities, to a work life of a high quality.

Vocational Education Writers' Tip Sheet

In the fall of 1990, Congress passed the Carl D. Perkins Vocational and Applied Technology Act, an action which requires significant changes in vocational education and which may dramatically affect all secondary and postsecondary education. In recent years, much attention has been paid to the state of education in the United States, since the U.S. has fallen behind other countries in both technology and education. With today's rapidly changing, high-tech work environment, vocational education—the process of producing a highly skilled workforce—is now emerging as a central element in educational reform.

The national reform efforts of the 1990s will focus on non-college-bound youth and preparations for a quality workforce for the future. Three key areas—academic and vocational integration, tech-prep, and performance standards and measures—are the focus of some of the major vocational education reforms called for by the Perkins Act.

Public debates at the national, state, and local level are already occurring as educators and policymakers grapple with basic questions of direction, program management, funding, and pelformance standards and measures. The deadline for implementation of some of the Perkins Act reforms is 1992, so you should be hearing more about vocational education this year and over the next several years.

Are you prepared to cover the issues in vocational education? Do you know who the players are? Do you know what the terms mean? Do you know where to go to get more information?

The National Center for Research in Vocational Education (NCRVE) wants to make your job easier. NCRVE is a national research and development organization, funded by the Office of Vocational and Adult Education, U.S. Department of Education. It is the nation's primary resource for research and exemplary practice in vocational education. The presence of NCRVE and its five subcontractor sites in nearly every region of the country places the operation in direct contact with vocational education practitioners and a diversity of labor markets. The mission of NCRVE is to engage in research and related activities to increase the access of all Americans to a high-quality work life that is not only economically rewarding, but also personally fulfilling.

The following tips are designed to familiarize you with the key issues facing vocational educators today and to provide details on resource materials and contacts available to you as educational writers.

Integrating Academic and Vocational Education

"Critics of high schools, noting the large numbers of students bored by conventional academic methods, have called for new methods to invigorate secondary education, including techniques which vocational education has traditionally espoused."

W. Norton Grubb
NCRVE Site Director
University of California at Berkeley

Integration refers to the application of both academic *and* vocational training methods and curricula to improve both basic skills learning and technical training for today's workplace. The Perkins Act, regulating federal funds for vocational programs, requires that all federally funded programs integrate academic and vocational education. Requirements apply equally to secondary and postsecondary programs.

Since efforts to integrate academic and vocational education are still in their infancy, it is somewhat difficult to define what can or should be done. The Perkins Act requires a "coherent sequence of courses," which suggests a planned, carefully coordinated effort over time. However, there are no clear program guidelines.

NCRVE researchers have identified eight integration models, ranging from modest efforts to increase remedial education within existing vocational courses to ambitious efforts to restructure schools. Each of the eight models may have several variations:

- Incorporating **more academic content** in vocational courses
- **Combining academic and vocational teachers** to incorporate academic content into vocational programs
- **Making academic courses more vocationally relevant**—"applied academics"
- **Curricular "alignment,"** modifying both academic and vocational education
- **The senior project**—requiring students to perform research and/or a physical project to demonstrate what has been learned from different courses
- **The Academy model**—schools within schools, where teachers stay with students through their entire program and there is an occupational focus and close ties to employers
- **Occupational high schools and magnet schools**—schools focused on a cluster of occupations like health or agriculture

- **Occupational clusters, career paths, and occupational majors**—a matrix structure where students focus on one broad vocational area

Many schools are experimenting with these models and adjustments to existing curricula. In addition to the curriculum changes, there are other actions which could be used to support the integration of academic and vocational education:

Course approval process
- add integration criteria to course approval mechanisms
- redefine graduation and college entrance requirements
- modify exit exams

Funding
- use state funds to match and/or supplement federal funds
- focus state-funded academics closer to federally funded vocational education

Teacher training policies and programs
- educate a new generation of teachers receptive to inter-disciplinary teaching

Many schools have recognized that enhanced guidance and counseling is necessary to help students understand the purpose of both academic and vocational offerings, and to make informed decisions.

There have been fewer efforts to integrate academic and vocational education at the postsecondary level. Among the possibilities for integration in community colleges, technical institutes, and area vocational schools are the following:

- general education requirements for students in Associate programs
- applied academic courses like technical writing, business communication, and technical math
- expanded vocational courses where academic units (material like ethics or history) are added
- cross-curriculum programs like "Writing Across the Curriculum," which encourages instuctors in all areas to include more writing
- tandem courses—academic and vocational courses designed to be taken at the same time
- cross-disciplinary and hybrid courses combining an academic subject with occupationally oriented issues
- vocationally oriented remedial programs that use vocational context to teach reading, writing, and math.

"Integration can be interpreted as efforts to reconstruct the American high school—to grapple with some of its most serious failings and develop a new vision of what secondary education should be."

W. Norton Grubb

Tech-Prep

"The skill needs of the new workforce must be improved if the U.S. is to reacquire its competitive edge: for almost all workers in technical fields this will entail some *postsecondary education."*

Gerald Hayward
NCRVE Deputy Director

Tech-prep is a term used to describe a variety of activities intended to coordinate high school and post-secondary coursework, particularly at the community college level, in order to prepare students for a more productive work life.

It is especially designed for the needs of the "neglected majority" of non-college- or non-university-bound students who are enrolled in "general education" courses. These general courses traditionally have lacked the rigor of the college-prep curriculum or the job-specific practicality of the vocational curriculum, leaving students equipped for neither college nor work.

As the size of the available workforce diminishes and industry demands greater technical skills, interest has increased in programs designed for better preparation for technology, hence the term *tech-prep*. Programs of one or more of the following types currently are operating in at least 33 states:

- **Traditional Agreement**—a written pact; high school and community college staffs have access to each other's course outlines, but there is little or no effective cooperation
- **Advanced Placement**—high school students take community college courses, for advanced placement credit
- **"Two Plus Two"**—an extended, coordinated, sequential curriculum designed for the last two years of high school and an associate degree or certificate at the completion of two years of community college. Variations include 2+2+2, which adds college or university training; 4+2, which begins at the start of high school; and 4+2+2, which merges high school, community college, and college/university programs.
- **Enhanced Technical Education**—a core of high school coursework in math, science, and communications with technical education specialization developed at the community college level

Several additional approaches have been suggested:

- **More Information**—make no changes to existing curricula, but

increase counseling and information efforts

- **Nonduplication**—approve specific high school courses for credit or advanced standing at postsecondary institutions so students need not duplicate work

- **Modified Curriculum**—e.g., change academic prerequisites, integrate academic and vocational material, develop occupational cluster programs, or provide more general vocational courses at the high school level, with skills-specific instruction at the postsecondary level

Successful tech-prep programs enhance levels of high school academic courses, increase student motivation to learn academic concepts by tying them together with technical skills required for particular careers, improve high school graduation (completion) rates by making programs more work-related and geared toward potential employment, increase student understanding of beginning and mid-level career opportunities, improve student self-esteem, and provide increased numbers of qualified workers for the local workforce. Often, too, these programs increase the number of students who go on to community or four-year colleges.

The Perkins Act requires the following for tech-prep programs to be eligible for funding:

- must include written agreements between participating secondary and postsecondary institutions

- must consist of at least two years of secondary school prior to graduation and at least two years of postsecondary education

- must consist of a common core of required proficiency in mathematics, science, communications, and technologies designed to lead to an associate degree or certificate in a specific career field

The Act also encourages programs that:

- develop specific curriculum tailored to the needs of participants

- include inservice training for teachers

- include training programs for counselors to enable them to recruit more effectively, ensure suc-cessful completion of programs by students, and ensure appropriate employment placement for students

"Tech Prep is for those who have not traditionally been college-bound...those students who have been in 'general education' courses which have lacked the rigor of the college-prep curriculum or the practicality of the vocational education curriculum...who leave high school equipped neither for college nor work."

Gerald Hayward

Performance Standards and Measures

"At both the secondary and postsecondary level there has never been a mind-set that data are something that can be used to improve programs —data are something you have to report to the state to get reimbursed."

Gary Hoachlander
NCRVE Director of National
Planning and Evaluation

Performance standards and measures is the generic term used to described the accountability system being used to determine whether the goals of education are being met.

Measures are those variables used to quantify or describe performance (e.g., the *number* of students graduating from a program, the *time* it takes to complete something, or the *level* of reading achieved).

Standards, on the other hand, define the minimum level of performance considered *acceptable*.

In vocational education, standards might apply to areas such as:

- advancing to the next level of education or training (e.g., achieving a specified skills level or doing something in a certain amount of time)
- successfully entering a job related to training
- continuing to offer a course or program (e.g., percentage of students successfully completing the program)
- establishing acceptable program or institutional performance (e.g., percentage of program graduates being hired by industry)

Standards may be established to measure performance at a single point in time (benchmark criteria) or to measure performance over time (value added or longitudinal measures). Most experts argue that a mixture of both absolute performance standards and measures emphasizing gains/progress is necessary.

Measures and standards may be defined for students, courses, programs, institutions, districts, regions, or states. They tend to fall into one of three broad categories:

- **Learning Measures and Standards** —those which deal with acquisition of academic and vocational skills (e.g.,

student achievement on standardized or competency-based tests, course/program completion rates, high school graduation rates, rates of completion of degree/certificate programs, course-taking patterns)

- **Labor Market Measures and Standards**—those relating to performance in the labor market after leaving vocational education (e.g., time needed to find and secure employment, placement rates, entry level wage, quarterly earnings, time employed in first job, employer and employee satisfaction)

- **Accessibility Measures and Standards**—those measuring access to programs, completion of programs, and entry into the labor market for students with special needs (e.g., the percentage of special needs students enrolled in and completing programs compared to the percentage of special needs students in the general school population, or the percentage of these students entering jobs related to training compared to the percentage of all students entering jobs)

The Perkins Act requires each state by October 1992 to develop *and* implement a statewide system of core standards and measures of performance for secondary and postsecondary vocational education. The minimum requirements are measures of student progress in basic and advanced academic skills and one or more of the following measures:

- competency attainment
- job or work skill attainment
- retention in school
- placement

Additionally, the systems must include adjustments or incentives that encourage service to special populations, including at-risk, single parent, handicapped, and minority students.

"Students need to know that there are absolute standards that they have to achieve if they are likely to participate in certain kinds of occupations.... It does students a disservice to say 'You've made great gains here; you've moved from the second grade reading level to the fifth grade level' when a fifth grade reading level will not do on the job."

Gary Hoachlander

How to Cover Vocational Education

Read more about it.

NCRVE publishes a variety of materials on vocational education:

- research reports
- working papers dealing with key issues
- presentations made by NCRVE personnel
- reprints of important journal articles by Center researchers
- a directory of Center Staff, including their expertise

These materials are available at minimal cost from the NCRVE Materials Distribution Service. To get a catalog or for ordering information, see page 12.

Look for local angles to national stories.

As the wire services report on education and issues dealing with the economy, find the stories with local impact and see if there's a vocational education angle. For example:

The "technology-information gap" (U.S. companies losing ground to foreign factories and workers whose work forces are trained in the new technologies)

- *How high-tech are local companies?*
- *How high-tech is local vocational education?*

High unemployment in a particular area or industry

- *What kind of local job training or retraining is offered?*
- *What relationships exist between local schools and businesses?*

Talk with the experts.

On the following pages and in the NCRVE *Human Resource Directory* are lists of the NCRVE research sites and some of the many NCRVE subject-matter experts who are available to answer your questions about vocational education issues.

Check out the local situation.

A little research on what's happening at the local level may give you numerous story ideas:

- *Do a survey*—ask basic questions like: What's being done? How many people are being served? Do the programs have adequate budgets, books, teachers, equipment, resources, and community support (particularly from the business community)? What's the completion rate? What's the relationship between secondary and postsecondary programs?

- *Ask state and local officials*—Is vocational education on their agenda? Are they dealing with job training issues of importance to local businesses? Has the state set standards for vocational education?

- *Ask your Senator or Representative*—find out how they feel about vocational education and what they're doing about it

- *Talk to the teachers*—get their success stories, hear their frustrations

- *Talk to students*—ask them what they envision their personal future to be. See if it matches the education they're receiving. Find out who's in vocational programs and why; ask what they are learning.

Follow the issues. Ask the hard questions.

Who will pay the bill for the greater investment required for these "improvements"?

What approaches are appropriate for federal funding? For state funding? Should funds be allocated for tech-prep by a competitive process or by formula?

To what extent are those charged with meeting new goals being involved in creating them? (What's the role of local teachers in the reform process?)

What should be the timing of reforms? How quickly should we expect results?

Are local, state, and national evaluation systems sophisticated enough to measure the kind of outcome envisioned?

How can national reforms be meaningful on the local and state levels?

What requirements should states add to those of Perkins?

Will national reform efforts stifle the creativity and energy of many districts to promote more control on the school site level?

How is local business coming up with ways to improve education? Do partnerships exist between schools and the local business community?

Is this trend just another fad?

Integration

What constitutes integration of academic and vocational education?

What constitutes a "coherent sequence of courses," required by the Perkins Act?

What steps can policymakers take to prevent integrated programs from being resegregated from other programs?

What policies should apply to the integration of vocational and academic education at the postsecondary level?

Tech-Prep

Which fields of study should qualify for tech-prep programs?

Should there be limitations on the ages of postsecondary students supported with tech-prep funds?

What practices should federal and state officials encourage to ensure that as many students as possible complete tech-prep programs?

What steps can officials take to ensure that vocational programs are well connected to other programs in both secondary and postsecondary education?

Standards and Measures

What constitutes good performance measures and standards?

What types of performance measures and standards should be developed? How many?

Why is it necessary to measure changes over time?

What kinds of statistical controls need to be incorporated into a system of performance standards and measures?

NCRVE Resources

NCRVE's mission is to invigorate vocational education so it can give citizens of all ages the skills they need for successful long-term employment. The Center views vocational education as work-related education that takes place in classrooms and in the workplace, accessible to both teenagers and mature workers. Our goal is to make this new vision of work-related education a reality.

While NCRVE personnel are well versed in a wide range of vocational education subjects, some specialize in key areas. Consult the enclosed *Human Resource Directory* for a list of specific subject matter resources. Should you have questions, contact the subject matter expert directly, or contact the Center at (800) 762-4093.

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Gary Hoachlander
Director of National Planning and Evaluation

Services at the Center

Dissemination
Peter Seidman manages the publication process for Center-developed materials; publishes *CenterWork*, the Center's newsletter, and *Change Agent*, a periodical summarizing recent Center research; manages ADVOCNET and other electronic networking; manages RIVE, and VECM, two national databases; and brokers field-initiated information requests.

JTPA and Vocational Education Coordination
The University of California site studies and reports annually upon the coordination between vocational education and the Joint Training Partnership Act (JTPA).

Technical Assistance for Planning and Evaluation
Gary Hoachlander works with federal agencies to shape the collection of national vocational education data; develops a statistical monograph on the condition of vocational education; and gives technical assistance on the use of NCRVE's Data Library, which he manages.

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1523 New Hampshire Avenue NW, 4th Floor
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Services at the Washington Liaison Office

Mary Cross assists major national organizations and federal agencies involved in education, training, and employment in the use of Center resources.

NCRVE Subcontractors

NCRVE functions with the assistance of five subcontractors, located throughout the country. For more information on vocational issues, contact the Center or the nearest NCRVE site.

Columbia University
Institute on Education and the Economy
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Box 174
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115 Lane Hall
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Services at the Subcontract Sites

Technical Assistance for Special Populations
The University of Illinois site provides resource and referral services to persons involved in vocational education with special needs populations; develops professional networks for such persons; provides targeted technical assistance to them; publishes a newsletter; develops materials; conducts workshops.

Advanced Study Center for Leadership Development
The University of Minnesota site conducts national forums on leadership issues; incorporates leadership development models into graduate-level and inservice programs, evaluating the models' effectiveness.

Inservice Education
The Virginia Polytechnic Institute site assists Center activities with the promotion of their inservice activities; coordinates inservice activities; and assesses inservice delivery strategies.

Materials Distribution Service

MDS publishes and distributes Center-developed products.

NCRVE Materials Distribution Service
Western Illinois University
46 Horrabin Hall
Macomb, IL 61455
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Ordering Information

The following are among the published materials which may be ordered from the NCRVE *Products Catalog*. Call **(800) 637-7652** for more information or send check or money order payable to "NCRVE–Materials Distribution Service" to:

NCRVE Materials Distribution Service
Western Illinois University
46 Horrabin Hall
Macomb, IL 61455

Informational Materials

The 1992 Agenda for the National Center for Research in Vocational Education (MDS-030) FREE

Human Resource Directory (MDS-209) FREE

Integration

Challenge to Change, W. N. Grubb (MDS-323) $2.00

"The Cunning Hand, The Cultured Mind": Models for Integrating Vocational and Academic Education, W. N. Grubb, G. Davis, J. Lum, J. Plihal, and C. Morgaine (MDS-141) $4.50

Exemplary Urban Career-Oriented Secondary School Programs, V. Mitchell, E. S. Russell, and C. S. Benson (MDS-012) $13.00

General Education: Vocational and Academic Collaboration, R. H. Beck (MDS-057) $7.00

Integrating Academic and Vocational Education: Guidelines for Assessing a Fuzzy Reform, C. Stasz and W. N. Grubb (MDS-375) $2.00

Integrating Academic and Vocational Studies (VHS videotape) (MDS-108) $15.00

Proceedings for Forum on Integrating Occupational and Academic Education (MDS-118) $2.50

Readin', Writin', and 'Rithmetic One More Time: The Role of Remediation in Vocational Education and Job Training Programs, W. N. Grubb, J. Calman, M. Castellano, C. Brown, and D. Bradby (MDS-309) $6.00

Reforming Education for Work: A Cognitive Science Perspective, S. A. Raizen (MDS-024) $6.25

Subject Matter of Vocational Education: In Pursuit of Foundations, G. H. Copa and E. Tebbenhoff (MDS-094) $6.25

Teaching and Learning Generic Skills for the Workplace, C. Stasz, D. McArthur, M. Lewis, and K. Ramsey (MDS-066) $4.50

An Uncommon Education: Interaction and Innovation, R. H. Beck, G. H. Copa, and V. H. Pease (MDS-140) $9.50

Vocational Preparation and General Education, R. H. Beck (MDS-198) $6.25

Standards and Measures

Designing a Plan to Measure Vocational Education Results, E. G. Hoachlander (MDS-321) $2.00

Performance-Based Policy Options for Postsecondary Vocational Education and Employment Training Programs, E. G. Hoachlander (MDS-020) $3.00

Performance Standards for Vocational Education: National, State, and Local Implications, an NCRVE National Satellite Teleconference (VHS videotape) (MDS-332) $15.00

Systems of Performance Standards and Accountability for Vocational Education: Guidelines for Development, E. G. Hoachlander (MDS-232) $2.00

Tech-Prep

Tech-Prep Programs: Issues in Implementing the Carl Perkins Amendments of 1990, W. N. Grubb (MDS-233) $2.00

Tech Prep: A Viable Solution for the Forgotten Half, J. L. Hoerner (MDS-376) $2.00